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Public support and visitation impacts of Sunday hunting on public hunting lands

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Sunday hunting legislation is complex, and often controversial, resulting in recreation impacts for both traditional (hunters, anglers, trappers) and non-traditional (e.g., hikers, birders, bikers, campers, horseback riders) public land users. There are currently 11 states in the U.S. that have restrictions on Sunday hunting, and two with total bans (National Conference of State Legislatures, 2015). Changes to these policies often spark controversy because of the impact to recreational experiences and visitation patterns of users in both groups. Conflict among these user groups is rare, but has occurred in association with differences in social values, and negative perceptions of hunting among some stakeholders (Vaske et al., 1995). Conflict may be reduced with safety precautions, such as wearing blaze orange or implementing zoning regulations limiting hunting near roads and certain amenities, as well as education (Vaske et al., 1995). North Carolina is one of the 11 states with regulations governing Sunday hunting on public hunting lands (hereafter known as game lands) and may serve as a valuable case study. Like other states with Sunday hunting restrictions, the prohibition on Sunday hunting in NC was enacted in the late 1800s and was a result of religiously motivated blue laws which limited activities on Sundays (Humphreys, 2016). In 2015, the NC State Legislature removed the prohibition on Sunday hunting on private property, and in 2017 granted the NC Wildlife Resources Commission authority to implement rules for hunting on Sundays on game lands.

Support for Sunday hunting varies between and among traditional and non-traditional user groups. Critics of Sunday hunting suggest it: (a) presents a safety risk for non-traditional users who have historically not experienced hunters in the field on Sundays, (b) negatively effects game populations by not protecting them from harassment or harvest for one day a week, and (c) is disrespectful of predominant religious views (Humphreys, 2016). Advocates of Sunday hunting believe it: (a) doubles hunting opportunities for those who work Monday through Friday, (b) facilitates recruitment, reactivation, and retention efforts by reducing barriers to hunting, (c) helps wildlife managers reach harvest goals, and (d) is a personal choice that should not be constrained by religious groups. We provide preliminary findings related to claims about how Sunday hunting may affect use of public lands by diverse user groups in North Carolina, USA.

We conducted intercept surveys at nine game lands across NC, three from each geological region of the state (mountains, piedmont, coastal plain). We administered surveys between Sept. 2017 and May 2019 at all nine locations on Saturdays and select weekdays and Sundays during hunting seasons. We deliberately focused our efforts to survey all opening

days of hunting seasons (including weekends and weekdays). We also surveyed random Saturdays, Sundays and weekdays during months without hunting seasons (June – August). All observed users were asked to complete a survey in person; however, a mail-in version of the same survey and an information letter and stamped envelope were placed on the windshield of unattended vehicles. Users reported whether they supported, opposed, or were unsure about allowing Sunday hunting on NC game lands ($n = 2,096$), and how allowing Sunday hunting would affect how often they visit NC game lands ($n = 2,069$). Respondents were asked which activities they were participating in on the day of intercept and which activities they participate in on any game land throughout the entire year. They also were asked how many game lands they had visited in the past year, the number of trips they took to game lands within the last year, and demographic information. The day of the week was recorded by the survey administrator. We used logistic regression to model support for Sunday hunting and Sunday hunting visitation impacts as a function of user type, frequency of game land use, number of game lands used, whether respondents used game lands on Sundays, and demographics.

Respondents were between 18 and 93 years of age ($M = 44$, $SD = 15$), and were primarily male (81%). User groups are nonexclusive, meaning one person may be included in multiple user groups. Support for Sunday hunting was high among hunters (71%), trappers (75%), anglers (65%), campers (61%), shooting range users (75%) and field trails participants (62%). Support for Sunday hunting polled stronger than opposition for all groups, except among equestrians and bird watchers (Table 1). Future visitation impacts largely reflected patterns in support for Sunday hunting, although many users said Sunday hunting would have “no impact” on use. Hunters (61%) and trappers (68%) said Sunday hunting would result in them visiting game lands more frequently, whereas equestrians (34%) and bird watchers (33%) were most likely to report planning fewer visits if Sunday hunting was allowed (Table 1).

Model results suggested users who participated in hunting, fishing, camping, and target shooting had an increased odds of supporting Sunday hunting compared to users who do not participate in these activities (Table 2). Users who participated in birding and horseback riding had lower odds of supporting Sunday hunting compared to users who do not participate in these activities. Non-hunting users intercepted on Saturdays or weekdays had twice the odds of supporting Sunday hunting than the same types of users intercepted on Sundays. Users who

Table 1. Support and opposition to Sunday hunting by activity and how Sunday hunting will impact visitation by activity.

Activity	Support and Opposition ($n = 2,096$)				Visitation Impact ($n = 2,069$)			
	Count	Support	Oppose	Unsure	Count	Visit More	Visit Less	No Impact
Trapping	65	75%	20%	5%	63	68%	3%	29%
Shooting Range	437	75%	14%	11%	432	47%	4%	49%
Hunting	1167	71%	19%	10%	1152	62%	5%	33%
Fishing	1036	65%	21%	14%	1017	47%	9%	44%
Field Trials	129	62%	29%	9%	127	40%	17%	43%
Camping	586	61%	21%	18%	581	39%	16%	45%
Motorized Boating	372	61%	23%	16%	362	47%	11%	42%
Hiking	1009	53%	28%	19%	997	31%	22%	47%
Canoeing/Kayaking	578	52%	27%	21%	572	26%	19%	55%
Biking	277	50%	31%	19%	227	28%	23%	49%
Birding	325	41%	42%	17%	323	28%	33%	39%
Horseback Riding	122	40%	45%	15%	121	26%	34%	40%

Table 2. Logistic regression models predicting support for Sunday hunting and if users would visit game lands more often if Sunday hunting were allowed.

Variable	Support for Sunday Hunting ^a			Visit More Often ^a		
	Estimate	Std. Error	Odds Ratio	Estimate	Std. Error	Odds Ratio
Hunting	0.87***	0.13	2.38	2.89***	0.23	18.00
Fishing	0.32*	0.13	1.38	0.85**	0.25	2.35
Hiking	0.02	0.14	1.02	-0.96***	0.25	0.38
Camping	0.44**	0.16	1.56	0.17	0.27	1.18
Birding	-0.65***	0.17	0.53	-0.43	0.28	0.65
Horseback Riding	-0.59*	0.25	0.56	-0.60	0.41	0.55
Shooting Range	0.94***	0.16	2.57	1.53***	0.32	4.64
Sunday User	-0.70**	0.24	0.50	-1.43**	0.42	0.24
Number of Game Lands Visited	-0.14*	0.07	0.87	-0.17	0.12	0.84
Year Born	0.03***	0.01	1.03	0.03***	0.01	1.03
Sex – Female	-0.75***	0.15	0.47	-0.83**	0.26	0.43
(Intercept)	-51.00***	8.01	0.00	-61.60***	15.20	0.00
Sample Size		1,751			1,109	

Insignificant variables are not displayed in the table (* $p < .05$, ** $p < .01$, *** $p < .001$).

^aUsers who were “Unsure” regarding their support or opposition for Sunday hunting or stated the policy would have “no impact” on visitation days were not included in models.

visited one to three game lands within a one-year time frame had greater odds of supporting Sunday hunting than users who visited six or more game lands within the same time period. Support for Sunday hunting decreased with age and was lower among female game land users. Similar patterns were observed in the logistic regression modeling visitation impacts. Users who participated in hunting, fishing, and target shooting had increased odds of visiting more often if Sunday hunting were allowed. Users who participated in hiking had lower odds of visiting more often if Sunday hunting were allowed. Users intercepted on Saturdays or weekdays had four times the odds of visiting more often if Sunday hunting were allowed than non-hunting users intercepted on Sundays. Younger individuals and male users had greater odds of visiting more often if Sunday hunting were allowed than their older and female counterparts.

Birders and equestrians reported the strongest opposition to Sunday hunting. Equestrians using game lands often ride off trail and may fear horses could be mistaken for white-tailed deer. Concern about Sunday hunting among birders is intuitive given peak songbird activity aligns with typical hunting hours (early morning and late evening). Women were more likely to oppose Sunday hunting and less likely to visit game lands if Sunday hunting were allowed, potentially because women tended to empathize with wildlife, scoring higher than men on humanistic and moralistic wildlife value orientation scales (Dietsch et al., 2018; Kellert & Berry, 1987). Women were also more likely than men to participate in certain types of non-consumptive wildlife related activities, including animal photography (Kellert & Berry, 1987). Older individuals were less receptive to Sunday hunting, possibly because they were familiar with current regulations and were less likely to support regulation changes (Bertsch et al., 2016). Older individuals may also be more religiously active and value the original intent of blue laws prohibiting Sunday hunting (Jones, 2019).

The large percentage of user groups who were “unsure” regarding their support or opposition for Sunday hunting may reflect an inability to visualize how Sunday hunting would affect their respective form of recreation. This uncertainty may present a valuable educational opportunity for state wildlife agencies currently reviewing their Sunday hunting policies, as they can likely leverage their education materials to foster support for Sunday

hunting among these “unsure” users and help them understand how Sunday hunting could benefit, or be benign to, their recreational experience.

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